

(C) *Immiscible carbon dioxide displacement.* The injection of carbon dioxide into an oil reservoir to effect oil displacement under conditions in which miscibility with reservoir oil is not obtained. This process may include the concurrent, alternating, or subsequent injection of water; and

(D) *Immiscible nonhydrocarbon gas displacement.* The injection of nonhydrocarbon gas (e.g., nitrogen) into an oil reservoir, under conditions in which miscibility with reservoir oil is not obtained, to obtain a chemical or physical reaction (other than pressure) between the oil and the injected gas or between the oil and other reservoir fluids. This process may include the concurrent, alternating, or subsequent injection of water.

(iii) *Chemical flood recovery methods—*(A) *Microemulsion flooding.* The injection of a surfactant system (e.g., a surfactant, hydrocarbon, cosurfactant, electrolyte, and water) to enhance the displacement of oil toward producing wells; and

(B) *Caustic flooding—*The injection of water that has been made chemically basic by the addition of alkali metal hydroxides, silicates, or other chemicals.

(iv) *Mobility control recovery method—**Polymer augmented waterflooding.* The injection of polymeric additives with water to improve the areal and vertical sweep efficiency of the reservoir by increasing the viscosity and decreasing the mobility of the water injected. Polymer augmented waterflooding does not include the injection of polymers for the purpose of modifying the injection profile of the wellbore or the relative permeability of various layers of the reservoir, rather than modifying the water-oil mobility ratio.

(3) *Recovery methods that do not qualify.* The term “qualified tertiary recovery method” does not include—

(i) *Waterflooding—*The injection of water into an oil reservoir to displace oil from the reservoir rock and into the bore of the producing well;

(ii) *Cyclic gas injection—*The increase or maintenance of pressure by injection of hydrocarbon gas into the reservoir from which it was originally produced;

(iii) *Horizontal drilling—*The drilling of horizontal, rather than vertical, wells to penetrate hydrocarbon bearing formations;

(iv) *Gravity drainage—*The production of oil by gravity flow from drainholes that are drilled from a shaft or tunnel dug within or below the oil bearing zones; and

(v) *Other methods—*Any recovery method not specifically designated as a qualified tertiary recovery method in either paragraph (e)(2) of this section or in a revenue ruling or private letter ruling described in paragraph (e)(1) of this section.

(4) *Examples.* The following examples illustrate the principles of this paragraph (e).

*Example 1. Polymer augmented waterflooding.* In 1992 G, the owner of an operating mineral interest in a property, begins a waterflood project with respect to the property. To reduce the relative permeability in certain areas of the reservoir and minimize water coning, G injects polymers to plug thief zones and improve the areal and vertical sweep efficiency of the reservoir. The injection of polymers into the reservoir does not modify the water-oil mobility ratio. Accordingly, the injection of polymers into the reservoir in connection with the waterflood project does not constitute polymer augmented waterflooding and the project is not a qualified enhanced oil recovery project.

*Example 2. Polymer augmented waterflooding.* In 1993 H, the owner of an operating mineral interest in a property, begins a caustic flooding project with respect to the property. Engineering studies indicate that the relative permeability of various layers of the reservoir may result in the loss of the injectant to thief zones, thereby reducing the areal and vertical sweep efficiency of the reservoir. As part of the caustic flooding project, H injects polymers to plug the thief zones and improve the areal and vertical sweep efficiency of the reservoir. Because the polymers are injected into the reservoir to improve the effectiveness of the caustic flooding project, the project is a qualified enhanced oil recovery project.

[T.D. 8448, 57 FR 54925, Nov. 23, 1992; 58 FR 6678, Feb. 1, 1993]

### § 1.43-3 Certification

(a) *Petroleum engineer's certification of a project—*(1) *In general.* A petroleum engineer must certify, under penalties of perjury, that an enhanced oil recovery project meets the requirements of

section 43(c)(2)(A). A petroleum engineer's certification must be submitted for each project. The petroleum engineer certifying a project must be duly registered or certified in any State.

(2) *Timing of certification.* The operator of an enhanced oil recovery project or any other operating mineral interest owner designated by the operator ("designated owner") must submit a petroleum engineer's certification to the Internal Revenue Service Center, Austin, Texas, or such other place as may be designated by revenue procedure or other published guidance, not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's federal income tax return for the first taxable year for which the enhanced oil recovery credit (the "credit") is allowable. The operator may designate any other operating mineral interest owner (the "designated owner") to file the petroleum engineer's certification.

(3) *Content of certification*—(i) *In general.* A petroleum engineer's certification must contain the following information—

(A) The name and taxpayer identification number of the operator or the designated owner submitting the certification;

(B) A statement identifying the project, including its geographic location;

(C) A statement that the project involves a tertiary recovery method (as defined in section 43(c)(2)(A)(i)) and a description of the process used, including—

(I) A description of the implementation and operation of the project sufficient to establish that it is implemented and operated in accordance with sound engineering practices;

(2) If the project involves the application of a tertiary recovery method approved in a private letter ruling described in paragraph (e)(1) of § 1.43-2, a copy of the private letter ruling, and

(3) The date on which the first injection of liquids, gases, or other matter occurred or is expected to occur.

(D) A statement that the application of a qualified tertiary recovery method or methods is expected to result in more than an insignificant increase in

the amount of crude oil that ultimately will be recovered, including—

(1) Data on crude oil reserve estimates covering the project area with and without the enhanced oil recovery process,

(2) Production history prior to implementation of the project and estimates of production after implementation of the project, and

(3) An adequate delineation of the reservoir, or portion of the reservoir, from which the ultimate recovery of crude oil is expected to be increased as a result of the implementation and operation of the project; and

(E) A statement that the petroleum engineer believes that the project is a qualified enhanced oil recovery project within the meaning of section 43(c)(2)(A).

(ii) *Additional information for significantly expanded projects.* The petroleum engineer's certification for a project that is significantly expanded must in addition contain—

(A) If the expansion affects reservoir volume that was substantially unaffected by a previously implemented project, an adequate delineation of the reservoir volume affected by the previously implemented project;

(B) If the expansion involves the implementation of an enhanced oil recovery project more than 36 months after the termination of a qualified tertiary recovery method that was applied before January 1, 1991, the date on which the previous tertiary recovery method terminated and an explanation of the data or assumptions relied upon to determine the termination date;

(C) If the expansion involves the implementation of an enhanced oil recovery project less than 36 months after the termination of a qualified tertiary recovery method that was applied before January 1, 1991, a copy of a private letter ruling from the Internal Revenue Service that the project implemented after December 31, 1990 is treated as a significant expansion; or

(D) If the expansion involves the application after December 31, 1990, of a tertiary recovery method or methods that do not affect reservoir volume that was substantially unaffected by the application of a different tertiary recovery method or methods before

January 1, 1991, a copy of a private letter ruling from the Internal Revenue Service that the change in tertiary recovery method is treated as a significant expansion.

(b) *Operator's continued certification of a project*—(1) *In general.* For each taxable year following the taxable year for which the petroleum engineer's certification is submitted, the operator or designated owner must certify, under penalties of perjury, that an enhanced oil recovery project continues to be implemented substantially in accordance with the petroleum engineer's certification submitted for the project. An operator's certification must be submitted for each project.

(2) *Timing of certification.* The operator or designated owner of an enhanced oil recovery project must submit an operator's certification to the Internal Revenue Service Center, Austin, Texas, or such other place as may be designated by revenue procedure or other published guidance, not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's federal income tax return for any taxable year after the taxable year for which the petroleum engineer's certification is filed.

(3) *Content of certification.* An operator's certification must contain the following information—

(i) The name and taxpayer identification number of the operator or the designated owner submitting the certification;

(ii) A statement identifying the project including its geographic location and the date on which the petroleum engineer's certification was filed;

(iii) A statement that the project continues to be implemented substantially in accordance with the petroleum engineer's certification (as described in paragraph (a) of this section) submitted for the project; and

(iv) A description of any significant change or anticipated change in the information submitted under paragraph (a)(3) of this section, including a change in the date on which the first injection of liquids, gases, or other matter occurred or is expected to occur.

(c) *Notice of project termination*—(1) *In general.* If the application of a tertiary recovery method is terminated, the operator or designated owner must submit a notice of project termination to the Internal Revenue Service.

(2) *Timing of notice.* The operator or designated owner of an enhanced oil recovery project must submit the notice of project termination to the Internal Revenue Service Center, Austin, Texas, or such other place as may be designated by revenue procedure or other published guidance, not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's federal income tax return for the taxable year in which the project terminates.

(3) *Content of notice.* A notice of project termination must contain the following information—

(i) The name and taxpayer identification number of the operator or the designated owner submitting the notice;

(ii) A statement identifying the project including its geographic location and the date on which the petroleum engineer's certification was filed; and

(iii) The date on which the application of the tertiary recovery method was terminated.

(d) *Failure to submit certification.* If a petroleum engineer's certification (as described in paragraph (a) of this section) or an operator's certification (as described in paragraph (b) of this section) is not submitted in the time or manner prescribed by this section, the credit will be allowed only after the appropriate certifications are submitted.

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**§ 1.43-4 Qualified enhanced oil recovery costs.**

(a) *Qualifying costs*—(1) *In general.* Except as provided in paragraph (e) of this section, amounts paid or incurred in any taxable year beginning after December 31, 1990, that are qualified tertiary injectant expenses (as described in paragraph (b)(1) of this section), intangible drilling and development costs (as described in paragraph (b)(2) of this section), and tangible property costs